

season progressed they have selected pathways of higher latitude; and moreover, their intensity has increased. As these barometric waves have advanced and spread out from the Northwest and West, toward the Alleghanies; the pressure rather increased than diminished. Their front has been distinguished as well by low temperatures, heavy snows and rains, as by high barometer readings; and generally they have given rise to high northerly winds in their front, and high southerly winds in their rear, the atmospheric mass drawing around the crest in the direction of the hands of a clock. The very high pressure of the 27th–30th of November while in the Northwest, by retarding the advance of the storm-centre on its western side, until the pressure over the Rocky Mountains could accumulate, apparently explains the violence of the storm that has since passed over the Lakes. The course of these waves may be discerned on Map No. 2 by the isobaric lines.

### TEMPERATURE.

The November temperature has been much lower than usual in New England; and generally lower over the whole country east of the Rocky Mountains. In the Lower Mississippi, the Lower Missouri valleys, and the Gulf States the normal temperature has prevailed. The variation from the normal in the Ohio valley and Tennessee has been very little— $1^{\circ} 2'$  below. The thermometric means will be found on Map No. 2, which gives the isothermal lines. The lowest temperature reported (except from mountain stations) was— $22^{\circ}$  at Pembina.

### PRECIPITATION.

Map No. 3 gives approximately the rainfall for the different sections this side of the Rocky Mountains. The marginal table on the map explains where there has been abnormal excess or deficiency. The official report from Yankton, Dakota, shows that there has been hardly any appreciable rainfall in that section during the entire month. The greatest precipitation was in Southeastern Massachusetts and near Galveston.

### RIVERS.

The Red river was highest above low-water mark on the 25th, when its rise was 13 feet 3 inches. The Missouri reached its highest between the 20th and 27th. The Upper Mississippi on the 28th, when it was five feet above low-water mark at St. Paul, and 8 feet 6 inches at St. Louis. At Cairo, on the 29th, the Mississippi maximum was 14.9 above low-water. At New Orleans, on the 1st, it was 13 feet and 4 inches below high-water mark. The Cumberland, at Nashville, and the Ohio, at Cincinnati, on the 28th, were over twenty feet above low-water.

The lowest fall of the Ohio was on the 12th, when at Cincinnati it was 8 feet; that of the Mississippi on the 19th, at Cairo, 6 feet 6 inches; that of the Red river on the 20th, at Shreveport, 6 feet 3 inches.

### PECULIAR PHENOMENA.

The display of auroras in the Lake region does not seem to have been as frequent or as brilliant as usual; nor have the November cyclonic disturbances been as numerous or as marked as usual during the past month. At New York, on the 22d, the peculiar arrangement of cirrus clouds, known as the "Polar Bands," was reported by the Obser-